Predictions

Heating Degree Day Outlook

The outlook for February through May calls for heating degree day accumulations along the Atlantic Coast higher than the same period last year. In the February through May period last year all 10 stations experienced above normal temperatures and consequently below normal heating degree days. This year below normal temperatures are projected for the entire Atlantic Coast for mid-February through mid-March with the highest probabilities for the outlook on the southern coast from Virginia through Florida. Combining this outlook with normal heating degree days for the rest of the period increases of 1-10 percent in heating degree day totals over last year are projected for the coast from Maine through Georgia and even larger increases in Florida which experienced a very mild late winter last year.

Table 1. Outlook for Heating Degree Days (Base 65°F) for Selected Atlantic Coast Stations Based on a Climatological Interpretation of the mid-February to mid-March 1983 National Weather Service Outlook (NOAA/EDIS/AISC/CIAD).

Station	Observed heating degree days mid-Feb.-mid-Mar. 1983	Outlook for heating degree days mid-Feb.-mid-Mar. 1983	80 Percent confidence interval on the outlook
1. Portland, ME	3193	3220	2850-3590
2. Boston, MA	2499	2532	2189-2874
3. Providence, RI	2488	2678	2344-3012
4. New York, NY	2096	2207	1929-2485
5. Norfolk, VA	1463	1539	1223-1759
6. Wilmington, NC	883	968	738-1159
7. Charleston, SC	738	822	612- 997
8. Jacksonville, FL	265	535	279- 701
9. Orlando, FL	61	313	165- 439
10. Miami, FL	4	91	48- 133

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Research Updates

Buoys Providing Up-to-Date Wave Data for Mariners

A series of 36-inch orange and white spheres bobbing at intervals along the Pacific Coast from Grays Harbor, Washington, to San Diego, California, and off Hawaii are performing a vital, round-the-clock task for mariners. Commerical fishermen, recreational boaters, and others who venture beyond the confines of a safe harbor need information about waves.

According to Dr. Richard J. Seymour, a state oceanographer operating with the Nearshore Research Group at Scripps, "These orange and white spheres are wave gauge buoys that continuously measure wave height and frequency. The information is radioed to a receiver on shore. The data are sent via telephone to Scripps where they are processed in real time and sent on to the National Weather Service. The Weather Service distributes the computed wave measurement along the entire west coast and to Hawaii through VHF weather channel broadcasts."

Because this information is distributed rapidly, fishermen and boaters have actual measured wave heights and wave periods from a number of locations. Radio advisories of offshore conditions are usually only about five minutes old. By comparing trends in wave heights and frequencies at several locations, scientists can forecast approaching storm seas, and National Weather Service personnel can use the data to refine their broadcast models.

According to Meredith Sessions, "The entire wave gauge array is part of the Coastal Data Information System based at Scripps. While its primary base is in California, it has been gradually extended to parts of Oregon, Washington, Hawaii, Virginia, and North Carolina, and we hope to establish additional buoys in these states. One of the primary goals of the program is to maintain data over a long time period so that we may better understand the wave climate."

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Decrease in Size of Brown Shrimp in Landings from Northern Gulf of Mexico

Scientists at the Southeast Fisheries Center, National Marine Fisheries Service, NOAA, have detected a significant decrease in the size composition of May-August landings (inshore and offshore combined) of brown shrimp (*Penaeus aztecus*) from three regions of the northern Gulf of Mexico. The regions studied over the years 1960 to 1981 were: 1) Texas coast; 2) Mississippi River to Texas, representing that part of the Louisiana coast west of the Mississippi River; and 3) Pensacola to the Mississippi River, representing that part of the Louisiana coast east of the Mississippi River, the Mississippi Coast, the Alabama coast, and a small portion of the upper west coast of Florida (excluding Pensacola Bay).

While the size of brown shrimp has decreased in all three regions, brown shrimp taken from the Texas coast have been consistently larger than those from Pensacola to the Mississippi River. Brown shrimp taken from Pensacola to the Mississippi River have been consistently larger than those from the Mississippi River to Texas. Such differences undoubtedly reflect differences in regulations of inshore and offshore fishing in the three regions.

Year-to-year variations in weight of the May-August brown shrimp landings were positively correlated among the three regions, suggesting a regionwide influence (e.g., parallel variations in recruitment, fishing effort, or both). Yet, within each region, there was no significant correlation between the weight of the May-August landings and the size composition of these landings, indicating that size composition was not the major factor affecting the weight of the landings. This suggests other overriding influences on weight of the landings. Year-to-year variations in recruitment linked to climatic variations, or variations in fishing effort, or both could have represented such overriding influences.

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Growth of Georges Bank Ocean Quahogs

Small, young ocean quahogs (*Arctica islandica*) typically have a light brown to mahogany periostracum that darkens to black with increasing size and age (hence, the common names mahogany and black quahog, respectively). The brown or mahogany coloration persisted in intermediate and some large ocean quahogs collected in 1980 from southern Georges Bank and was a condition immediately recognized as being unlike that seen for Middle Atlantic Bight ocean quahogs. This obvious dissimilarity suggested that age and growth characteristics of ocean quahog populations on Georges Bank may be different from those of other geographic areas.

As had been done in a study of ocean quahogs from off Long Island, N.Y. (Murawski et al. 1982), the shells of ocean quahogs from Georges Bank were sectioned, polished and etched with a 1% HCl solution preparatory to producing acetate peels for examination of age and growth phenomenon. Some shells of ocean quahogs from off Sable Island, Canada, were also processed to provide specimens from a third geographic area. Ropes and Pyoas (1982) presented photographs of age annuli in ocean quahogs of nearly equal shell lengths from the collections on Georges Bank, off Long Island, N.Y., and Sable Island, Canada. Georges Bank quahogs were clearly younger than those from off Long Island or Sable Island; Sable Island quahogs were the oldest.

Mean length at age of 82 ocean quahogs from Georges Bank was compared to growth data obtained from studies of marked clams released and recovered at a site off Long Island, N.Y. (Murawski et al. 1982). A power curve fitted to the Georges Bank data and plotted along with growth curves from the Long Island area indicated a much slower growth rate for the latter area (Fig. 1).

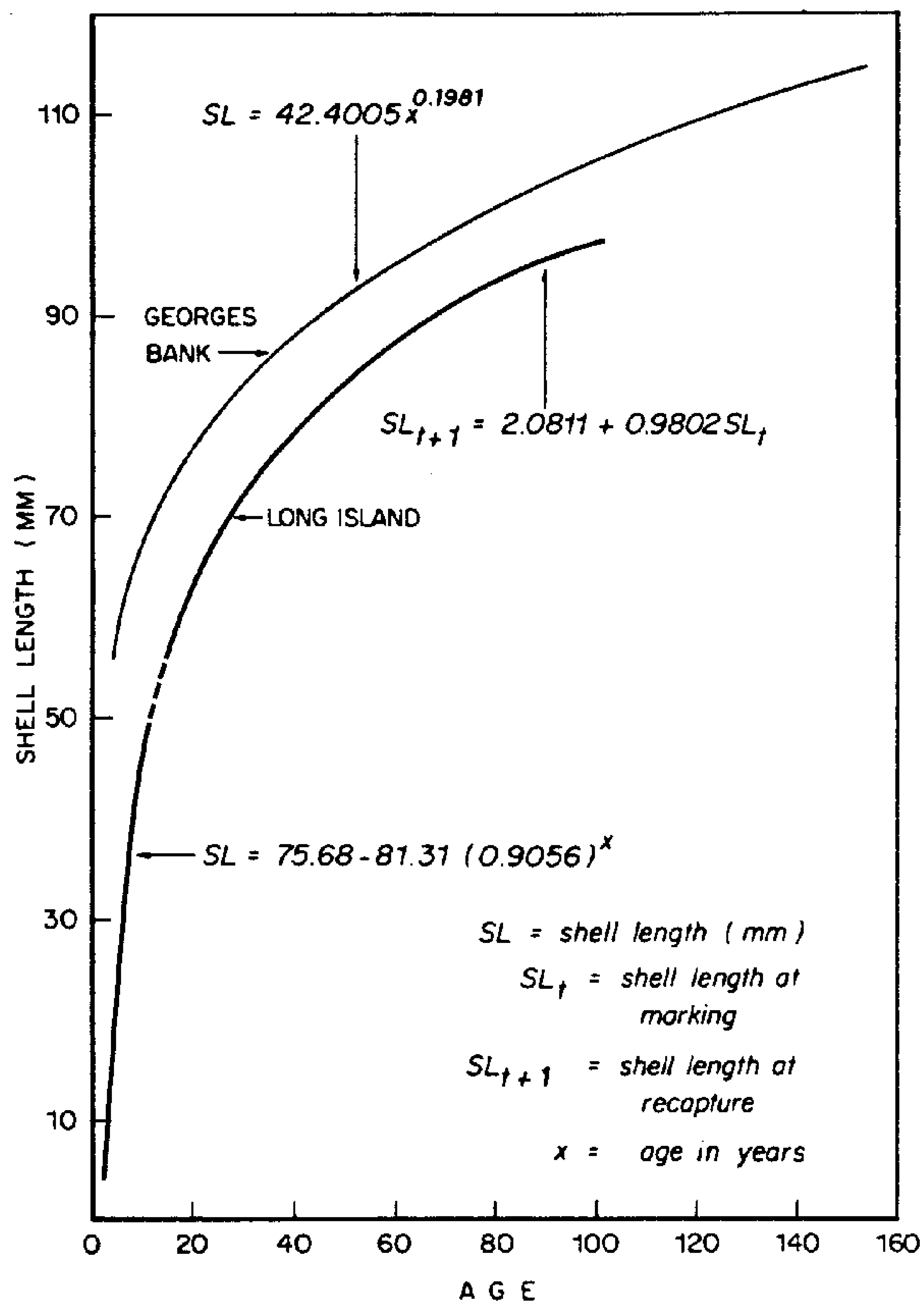

Figure 1. Age vs. shell length comparison of ocean quahogs from Georges Bank and off Long Island, New York. Curve for Long Island quahogs from Murawski et al. (1982).

References

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